



(12) **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:
16.04.2003 Bulletin 2003/16

(51) Int Cl.7: **G03G 15/20**

(43) Date of publication A2:
09.04.2003 Bulletin 2003/15

(21) Application number: **02020393.1**

(22) Date of filing: **12.09.2002**

(84) Designated Contracting States:
**AT BE BG CH CY CZ DE DK EE ES FI FR GB GR
IE IT LI LU MC NL PT SE SK TR**
Designated Extension States:
AL LT LV MK RO SI

- **Takeuchi, Akihiko**
Tokyo (JP)
- **Abe, Atsuyoshi**
Tokyo (JP)
- **Shida, Tomonori**
Tokyo (JP)

(30) Priority: **14.09.2001 JP 2001279825**

(71) Applicant: **CANON KABUSHIKI KAISHA**
Ohta-ku, Tokyo (JP)

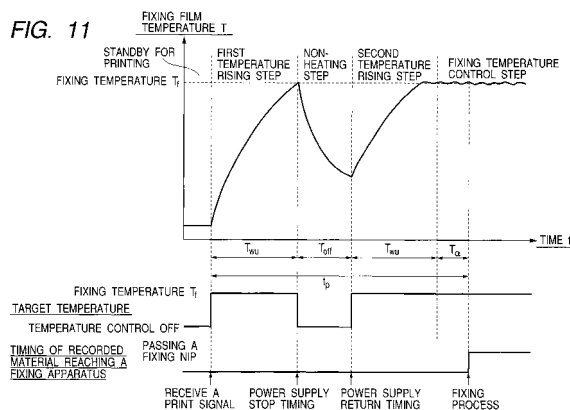
(72) Inventors:
• **Suzuki, Masahiro**
Tokyo (JP)

(74) Representative:
Leson, Thomas Johannes Alois, Dipl.-Ing.
Tiedtke-Bühling-Kinne & Partner GbR,
TBK-Patent,
Bavariaring 4
80336 München (DE)

(54) **Image forming apparatus and fixing apparatus including a power supply for heating at a fixing temperature when needed**

(57) An image forming apparatus has image forming means for forming an unfixed toner image on a recording material, heating and fixing means for heating and fixing the unfixed toner image on the recording material, temperature sensing means for sensing the temperature of the heating and fixing means, and power controlling means for controlling power supplied to the heating and fixing means so that the heating and fixing means keeps a fixing temperature T_f at least during the fixing operation based on an output from the temperature sensing means. The power controlling means controls

power supply to the heating and fixing means based on the output from the temperature sensing element during the time t_p from receipt of a print signal by the image forming apparatus to performing a heating and fixing process on the recording material so that, in the case where the temperature of the heating and fixing means rises fast, a temperature control operation for keeping the fixing temperature T_f should not be protracted before heating and fixing so as to control excessive rise in the temperature of the pressure member (pressure roller) and prevent a media slip.





European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 02 02 0393

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
X	EP 0 546 545 A (CANON KK) 16 June 1993 (1993-06-16) * page 6, line 3-46; figures 1-5,17,50-58 * * page 23, line 43 - page 25, line 14 * ----	1-6, 10-15, 19-22	G03G15/20
X	US 5 517 284 A (OHTAKE MASAKI ET AL) 14 May 1996 (1996-05-14) * column 2, line 17-22; figures 3,11 * * column 5, line 58 - column 6, line 13 * ----	1,2,6,7, 10,11, 15,16	
X	EP 0 301 544 A (CANON KK) 1 February 1989 (1989-02-01) * page 12, line 15-56; figures 3,19-21 * ----	1,2,6,7, 10,11, 15,16	
X	US 5 758 228 A (TAKAMATSUYA YOSHIHIRO ET AL) 26 May 1998 (1998-05-26)	1,2,6,7, 10,11, 15,16,23	TECHNICAL FIELDS SEARCHED (Int.Cl.7)
A	* column 29, line 21 - column 31, line 52; figures 27,31-37 * -----	8,9,17, 18	G03G
The present search report has been drawn up for all claims			
Place of search MUNICH		Date of completion of the search 17 February 2003	Examiner Kys, W
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

EPC FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 02 02 0393

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

17-02-2003

Patent document cited in search report		Publication date		Patent family member(s)	Publication date
EP 0546545	A	16-06-1993	JP	2925386 B2	28-07-1999
			JP	5165368 A	02-07-1993
			JP	5281866 A	29-10-1993
			JP	3102136 B2	23-10-2000
			JP	5289562 A	05-11-1993
			DE	69220463 D1	24-07-1997
			DE	69220463 T2	22-01-1998
			EP	0546545 A2	16-06-1993
			US	5464964 A	07-11-1995

US 5517284	A	14-05-1996	JP	3142972 B2	07-03-2001
			JP	6194995 A	15-07-1994

EP 0301544	A	01-02-1989	JP	1033578 A	03-02-1989
			JP	1033579 A	03-02-1989
			JP	1046781 A	21-02-1989
			JP	1046782 A	21-02-1989
			JP	2022855 C	26-02-1996
			JP	7048125 B	24-05-1995
			JP	1072188 A	17-03-1989
			JP	1118174 A	10-05-1989
			JP	1096678 A	14-04-1989
			JP	1167869 A	03-07-1989
			JP	2019307 C	19-02-1996
			JP	7050367 B	31-05-1995
			DE	3851671 D1	03-11-1994
			DE	3851671 T2	23-02-1995
			EP	0301544 A2	01-02-1989
			US	4937600 A	26-06-1990

US 5758228	A	26-05-1998	JP	8248816 A	27-09-1996
			CN	1157943 A ,B	27-08-1997
			DE	19549158 A1	18-07-1996
			KR	215299 B1	01-09-1999
			US	6018140 A	25-01-2000
